

Report of...

# Compliance Emission Testing

performed for...

## Metal Technologies

Auburn, Indiana

At

Three Rivers, MI

on the

Melt Baghouse Exhaust

September 7, 2017

187.05

Network Environmental, Inc.  
Grand Rapids, MI

**RECEIVED**

OCT 09 2017

AIR QUALITY DIVISION

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**I. INTRODUCTION**

Network Environmental, Inc. was retained by Metal Technologies of Auburn, Indiana to perform compliance emission testing on their Foundry Melt Baghouse Exhaust located in Three Rivers, Michigan. The purpose of the sampling was to comply with their Renewable Operating Permit MI-ROP-B2015-2013C and Permit to Install MI-PTI-B2015-2013C and the MACT standard for PM. The testing was for the following selected compound:

- \* Particulates

Sampling was conducted on the exhaust by employing the following reference test methods:

- \* Particulate – U.S. EPA Method 5
- \* Exhaust Gas Parameters (airflow rate, temperature, moisture & density) - U.S. EPA Methods 1-4

The sampling was conducted on September 7, 2017. R. Scott Cargill and Richard D. Eerdmans of Network Environmental, Inc. performed the testing. Mr. Dan Plant of Metal Technologies was present to coordinate source operations and data recording and collection during the testing. Mr. David Patterson and Mr. Rex Lane of the Michigan Department of Environmental Quality (MDEQ), Air Quality Division, were present to observe the testing and source operation.

## II. PRESENTATION OF RESULTS

**II.1 TABLE 1  
PARTICULATE EMISSION RESULTS  
MELT BAGHOUSE EXHAUST  
METAL TECHNOLOGIES  
THREE RIVERS, MICHIGAN  
SEPTEMBER 7, 2017**

Sample #	Time	Air Flow Rate DSCFM <sup>(1)</sup>	Concentration Lbs/1000Lbs, Dry <sup>(2)</sup>	Lbs/Hr <sup>(3)</sup>	Grains/DSCF <sup>(4)</sup>
1	8:11-9:56	49,449	0.00017	0.037	0.00009
2	10:34-12:18	47,733	0.00016	0.035	0.00009
3	12:55-14:40	48,614	0.00014	0.031	0.00008
<b>Average</b>		<b>48,598</b>	<b>0.00016</b>	<b>0.034</b>	<b>0.00009</b>

- (1) = Dry Standard Cubic Feet Per Minute (STP = 68 °F & 29.92 in. Hg)  
(2) = Pounds of particulate per 1000 pounds of exhaust gas on a dry basis.  
(3) = Pounds of particulate per hour  
(4) = Grains per Dry Standard Cubic Foot

### **III. DISCUSSION OF RESULTS**

The results of the emission testing performed on September 7, 2017 can be found in Section II, Table II.1.

The particulate limits for this source are 0.01 Lbs/1000Lbs, Dry, 1.7 Lbs/Hr and 0.005 gr/dscf.

### **IV. SOURCE OPERATION**

The source operating parameters can be found in Appendix B.

### **V. SAMPLING AND ANALYTICAL PROTOCOL**

The determinations were performed in accordance with the following sampling and analytical protocols.

**V.1 Particulate** - The particulate emission sampling was conducted in accordance with U.S. EPA Method 5. Figure 1 is a schematic diagram of the Method 5 sampling train. Each sample was ninety-six (96) minutes in duration and had a minimum sample volume of sixty (60) dry standard cubic feet. Method 5 is an out of stack filtration method where the probe and filter are kept at 250°F plus or minus 25°F. The samples were collected isokinetically.

The samples were recovered and refrigerated until they were analyzed. The filters and nozzle/probe rinses (front half) were analyzed gravimetrically for weight gain for the particulate analysis. All the quality assurance and quality control procedures listed in the methods were incorporated in the sampling and analysis.

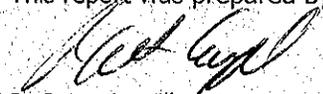
**V.2 Exhaust Gas Parameters** - The exhaust gas parameters (airflow rate, temperature, moisture, and density) were determined in conjunction with the other

sampling by employing U.S. EPA Reference Methods 1 through 4. All the sampling was conducted on the exhaust stack. There were two sampling ports on the exhaust located at 90 degrees from each other and on the same plane. The test port location was approximately 6 duct diameters downstream from any disturbance and greater than two duct diameters from the exhaust to atmosphere. A twenty-four (24) point (12 points per port) traverse was used to perform the sampling. The stack was fifty-two (52) inches in diameter. The sampling points were as follows:

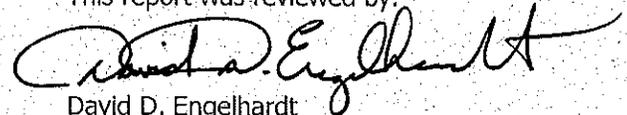
Point #	Point Location (Inches)
12	1.09
11	3.48
10	6.14
9	9.20
8	13.00
7	18.51
6	33.49
5	39.00
4	42.80
3	45.86
2	48.52
1	50.91

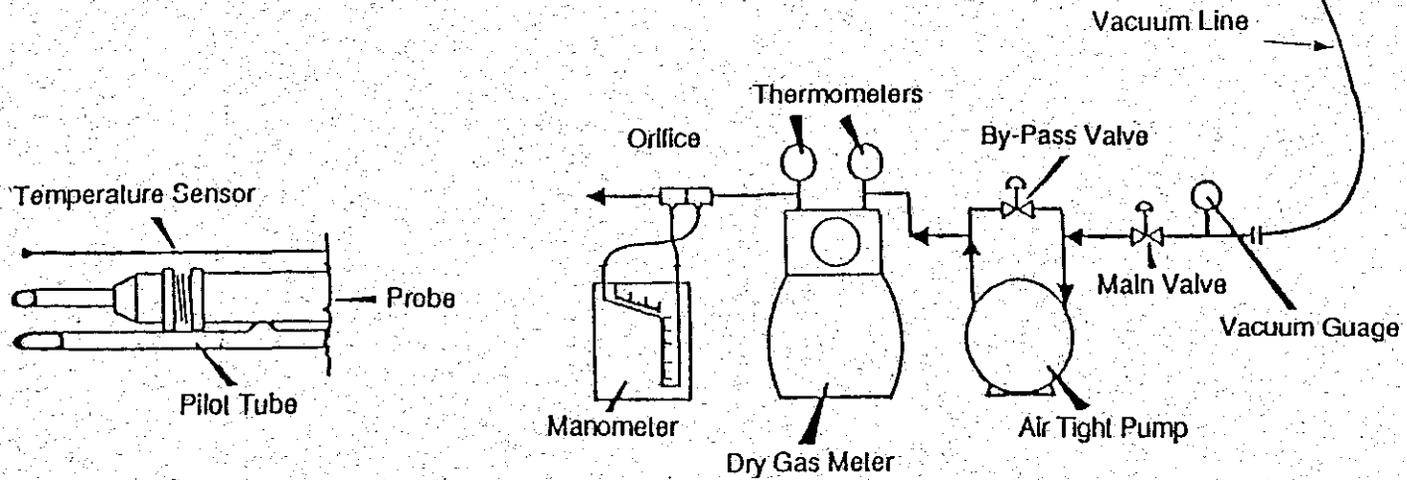
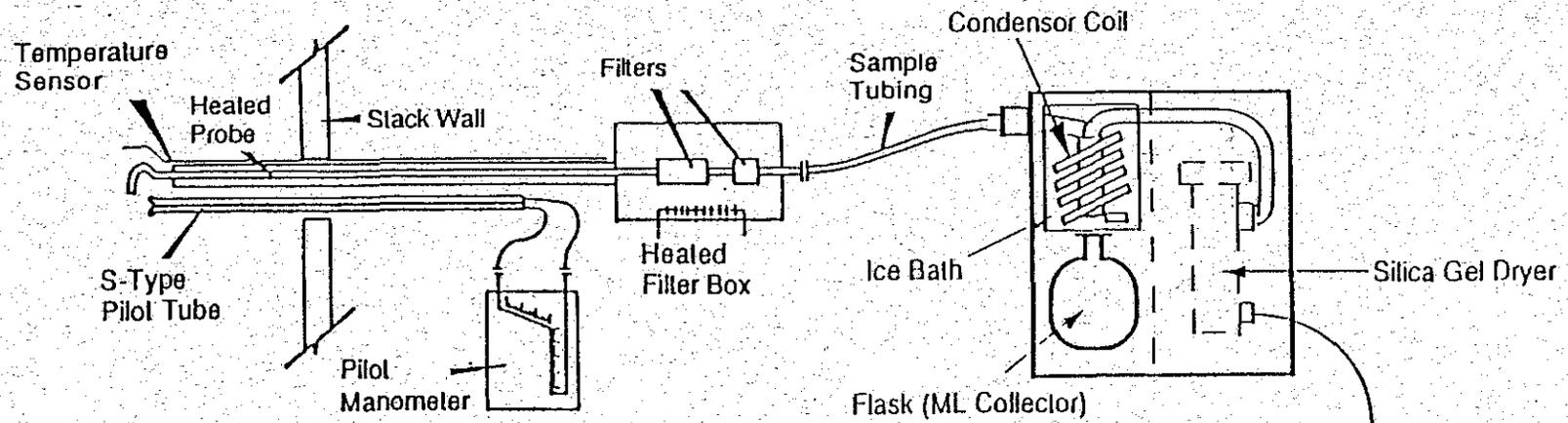
O<sub>2</sub> and CO<sub>2</sub> content were determined by Orsat Method. The moisture was determined from the isokinetic sampling trains. All the quality assurance and quality control procedures listed in the methods were incorporated in the sampling and analysis.

This report was prepared by:

  
 R. Scott Cargill  
 Project Manager

This report was reviewed by:

  
 David D. Engelhardt  
 Vice President



Particulate Sampling Train

FIGURE 1